

## ABSTRACT

A self-adjusting PWM regulator which minimizes undershoot and overshoot conditions is disclosed. The regulator includes a charge pump, a voltage comparator circuit, and a latch circuit. The input of the voltage comparator circuit includes an output of the  
5 charge pump. The input of the latch circuit includes an output from the voltage comparator circuit. The latch circuit includes a pair of SR latches coupled to a pair of AND/OR gates. The latch circuit transmits a first signal to the charge pump to prevent an overshoot condition if the output from the voltage comparator circuit is in a first state, and transmits a second signal to prevent an undershoot condition if the output from the voltage comparator  
10 circuit is in a second state. This keeps the charge pump adjusted within the limits of its control.